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EXAMINER

CHEA, THORL

| ART UNIT | PAPER NUMBER |
|----------|--------------|
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1752

DATE MAILED: 10/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/751,433

Applicant(s)

NAKAGAWA ET AL.

Examiner

Thorl Chea

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on July 18, 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☒ Claim(s) 1-30 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 08242005.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. This first office action is responsive to the communication July 18, 2005; claims 1-30 are pending in this instant application.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 14 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The scope of the protection sought for the condensed ring in claim 14 is indefinite since such scope is not clearly defined in the specification. The specification discloses a naphthalene as condense ring. However, the term "condense ring" appears to encompasses the scope beyond the preferred naphthalene ring. The use of the period "." in claim 14, last line is improper.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-12, 15-20, 22-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Tsukada et al (US 2002/0146654A1), Uytterhoeven et al (US Patent No. 6,143,488), Siga et al, (US Patent No. 4,332,889) and Toya et al (US Patent No. 5,998,126). Tusukada et al discloses a photothermographic material substantially as claimed. The material

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contains silver halide, a non-photosensitive organic silver salt, a polymer latex and a reducing agent. See content of the material in the abstract; the monomer groups (a) to (j) on page 4 wherein the conjugated diene in (a) is within the scope of monomer of formula (M) in claim 4; the binder having glass transition of from -20°C to 80°C on page 4, [0087]; the monomer having acidic group exemplified on page 5, [0090]; the reducing agent on page 2, [0034]; the toning agent and the super high contrast increasing agent known as development accelerator on page 26, [0198] to pages 27, [0201]; the polyhalogenate compound on page 51, polyhalogen compound A and polyhalogen compound B; the light-sensitive silver halide wherein the halogen content is not limited such as silver iodobromide on page 24, [0167]. Page 38, [0282] to [0284] discloses the heat developable recording material that may be exposed to laser light wherein the output of the laser not less than 1 mW, more preferably not less than 10 mW and still more preferably not less than 40 mW. Uytterhoeven et al disclose the use of a silver halide having silver iodide content at least 80 mole % having grain size of less than 40 nm to provide photothermographic material with excellent post-processing stability and the use of polymer latex as binder. See abstract and column 6, lines 52-53 and column 4, lines 26-50. It is disclosed Siga et al in column 6, lines 43-68 that "from the view point of sensitivity of image forming material, the silver halide is desired to contain, beside silver iodide, at least 2 mole %, based on silver halide component, silver bromide and/or silver chloride, although the silver halide may include only silver iodide, i.e. 100 mole % of silver iodide. Furthermore, from view point of stability of the raw image forming material, it is desired that silver halide component contains, besides silver iodide, silver bromide than silver chloride. Therefore, the most preferred silver halide component consists of silver iodide and silver bromide. In this case, silver iodide

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and silver bromide may be provided in either a mixture thereof or mixed crystals thereof. The molar ratio of silver iodide to silver bromide may be preferably 30/70 to 98/2, more preferably 50/50 to 95/5.” Toya et al discloses the use of silver halide having silver iodide from 0.1 to 40 mol % and having grain size from 0.01 micron to 0.08 micron in column 16 and the photothermographic material is to be exposed using laser having wavelength from 300 nm to 700 nm in column 2, lines 1-11.

Tsukada et al differ from the claimed invention in its failure to disclose the content of the silver iodide in the photosensitive silver halide of 5 % by mole or more. However, the silver halide having iodide content more than 5 % by mole has been known in either Uytterhoeven et al, Siga et al and Toya. It would have been obvious to use adjust the silver iodide content in the photosensitive silver halide to achieve an improved spectral sensitivity as well as storage stability and thereby provide a material as claimed.

6. Claims 13-16, 28-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsukada et al (US 2002/0146654A1), Uytterhoeven et al (US Patent No. 6,143,488), Siga et al (US Patent No. 4,332,889) and Toya et al (US Patent No. 5,998,126) as applied to claims 1-12, 15-20, 22-27 above, and further in view of Oya et al (US 2002/0048732A1) and Fukui et al (US 2002/0102502A1). Tsukada et al may not disclose the compound of formula A-1, A-2 in claim 13 and the organic polyhalogen compound in claim 16. However, these compounds have been known in Oya et al in the abstract, formula (1); Fukui et al in the abstract, formula (II) and page 18, [0187]. It would have been obvious to the worker of ordinary skill in the art at the time the invention was made to use a compound taught in Oya et al and Fukui et al to accelerate the development process as well as improving the fogging property thereof, and thereby provide a

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material as claimed. Oya et al and Fukui et al may disclose the condense ring such as naphthalene ring presented in claims 28, 29. However, this ring would have found prima facie obvious over the phenolic compound taught in Oya et al or Fukui et al due to the similarity of structure, functional group and its utility. A prima facie case of obviousness may be made when chemical compounds have very close structural similarity and similar utilities. "An obviousness rejection based on similarity in chemical structure and function entails the motivation of one skilled in the art to make a claimed compound, in the expectation that compounds similar in structure will have similar properties." In re Payne, 606 F.2d 303, 313, 203 USPQ 245, 254 (CCPA 1979). See In re Papesch, 315 F.2d 381, 137 USPQ 43 (CCPA 1963) (discussed in more detail below) and In re Dillon, 919 F.2d 688, 16 USPQ2d 1897 (Fed. Cir. 1991) (Discussed below and in MPEP § 2144) for an extensive review of the case law pertaining to obviousness based on close structural similarity of chemical compounds. See also MPEP § 2144.08, paragraph II.A.4.(c).

7. Claims 1-13, 15-27, 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Ohzeki et al (US Patent No. 2002/0197570A1), Uytterhoeven et al (US Patent No. 6,143,488), Siga et al (US Patent No. 4,332,889), and Toya et al (US Patent No. 5,998,126). Ohzeki et al disclose material substantially as claimed except specifically disclose the use of silver halide having silver iodide content 5 % by mole or more. See the photothermographic material on pages 55-56, claims 1-20; the bisphenol type reducing agent on page 35, [0248]; the use of polymer latex in the image forming having glass transition temperature between 20 °C to 80 °C including that containing butadiene from page 32, [0184] to

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pages 34, [0231]; and silver halides includes silver chloride, silver chloriodide, silver bromide, silver bromiodide or silver iodochlorobromide on page 19, [0133].

Uytterhoeven et al discloses the use of a silver halide having silver iodide content at least 80 mole % having grain size of less than 40 nm to provide photothermographic material with excellent post-processing stability and the use of polymer latex as binder. See abstract and column 6, lines 52-53 and column 4, lines 26-50. Siga et al in column 6 discloses the use of silver bromiodide having molar ratio of silver iodide to silver bromide of 30/70 to 98/2 to provide a photothermographic material to have improved spectral sensitivity as well as excellent storage stability. See column 6, lines 42-68 and abstract. Toya et al discloses the use of silver halide having silver iodide from 0.1 to 40 mol % and having grain size from 0.01 micron to 0.08 micron in column 16 and the photothermographic material is to be exposed using laser having wavelength from 300 nm to 700 nm in column 2, lines 1-11. It would have been obvious to the worker of ordinary skill in the art at the time the invention was made to use silver halide including silver halide having silver iodide content known in either Uytterhoeven et, or Siga et al or Toya as photocatalyst for the material taught in Ohzeki to provide an invention as claimed. The compound of general formula (M) in claim 4 belongs to butadiene monomer taught in Ohzeki. Also, Toya et al discloses the process of exposing a photothermographic material with laser beam having wavelength 300 nm to 700 nm. The intensity of 1 mW/mm² to 50 w/mm² is inherently related to the intensity of the laser.

8. Claims 14, 22-25, 28-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Ohzeki et al (US Patent No. 2002/0197570A1), Uytterhoeven et al (US Patent No. 6,143,488), Siga et al (US Patent No. 4,332,889), and Toya et al (US Patent No.

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5,998,126). as applied to claims 1-13, 15-25 above, and further in view of Fukui et al (US Patent No. 2001/0102502) and EP 1096310 A2 (EP'310). The development accelerator in claim 14 is taught in Fukui et al in the abstract and page 6, compound 2-1 to 2-8 to pages 7-9. EP'310 discloses to expose a photothermographic material using laser output at least 1 mW, and more preferably 40 mW. It would have been obvious to the worker of ordinary skill in the art to use a known development accelerator taught in Fuki et al to as development accelerator of the material taught in Ohzeki et al. The peak strength of laser presented in claim 23 is taught in EP'310, and it would obvious to the worker of ordinary skill in the art to use the laser output taught therein in the process for forming an image using the material obtained by the combination of the applied art above, and thereby provide a process as claimed. Fukui et al may disclose the condense ring such as naphthalene ring presented in claims 28, 29. However, this ring would have found prima facie obvious over the phenolic compound taught in Fukui et al due to the similarity of structure, functional group and its utility. A prima facie case of obviousness may be made when chemical compounds have very close structural similarity and similar utilities. "An obviousness rejection based on similarity in chemical structure and function entails the motivation of one skilled in the art to make a claimed compound, in the expectation that compounds similar in structure will have similar properties." In re Payne, 606 F.2d 303, 313, 203 USPQ 245, 254 (CCPA 1979). See In re Papesch, 315 F.2d 381, 137 USPQ 43 (CCPA 1963) (discussed in more detail below) and In re Dillon, 919 F.2d 688, 16 USPQ2d 1897 (Fed. Cir. 1991) (Discussed below and in MPEP § 2144) for an extensive review of the case law pertaining to obviousness based on close structural similarity of chemical compounds. See also MPEP § 2144.08, paragraph II.A.4.(c).

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9. The Terminal Disclaimer submitted on July 18, 2005 obviates any rejections under the under the judicially created doctrine of obviousness-type double patenting set forth in the previous office action. The rejections are withdrawn.

Response to Arguments

10. Applicant's arguments filed July 18, 2005 have been fully considered but they are not persuasive because of the reason set forth in the rejection above. The applicants argued that "claim 1 in the present invention is new in construction as recognized by examiner. Although various components recited in claim 1 are known in the prior art, the effects obtained by a combination of those components have not been known and provide an unexpectedly superior material. A photothermographic material according to the present invention is coated from an aqueous coating solution comprising a polymer latex as a binder of an image forming layer, and gives an image having improved discrimination and having higher sensitivity and lower Dmin, as well as an improved print-out property at an unexpectedly larger level, by a combination of a photosensitive silver halide having higher silver iodide content and a specified reducing agent represented by formula (R). Data shown in Tables 1 to 3 in the Examples of the present application support the above assertion. Especially outstanding results were obtained with a styrene/butadiene copolymer as set forth in claim 3 (see Table 1 in Example 1)."

It is the Examiner's position that the invention as claimed would have been found obvious to the worker of ordinary skill in the art at the time the invention was made. The polymer latex and silver halide having iodide content more than 5 mole % have been known in the art such as taught in the applied prior art of record. The unexpected results presented in the argument is based on the Counsel's assertion. Counsel's arguments cannot take the place of evidence. In re

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Greenfield, 571 F. 2d 1185, 197 USPQ 227 (CCPA 1978). The specification disclosure on page on page 294, Table 1 discloses that “as shown in Table 1, the photothermographic material-1 and -2 comprising silver halide of high silver iodide content were improved sensitivity and excellent in discrimination by using an aqueous polymer fine particle dispersion as a binder and a bis-phenol type reducing agent. The print-out was also improved in present invention.”. The showing of the improvement of the results is not sufficient to rebut the prima facie case of obviousness rejection. The results must be found “unexpected” or “surprising” to the worker of ordinary skill in the art. “One way for the applicant to rebut a prima facie case of obviousness is to make a showing of “unexpected results”, i.e., to show that the subject matter defined by the claims exhibits some superior property or advantage that a person of ordinary skill in the art would have been found surprising or “unexpected.” As stated in the majority opinion of *In re Soni*, 54 F. 3d 746, 750, 34 USPQ 1684, 1687 (Fed. Cir. 1995). The improvement of print-out (ΔD_{min}) shown in Table 1 would have found expected to the worker of ordinary skill in the art in view of Tsukada et al and Siga et al. See page 46 of Tsukada et al, which discloses that the use of polymer latex taught therein provide a photothermographic material with improvement of the image preservability as well as the coating property. Moreover, it is taught in Siga et al that silver iodobromide having molar ratio of silver iodide to silver bromide may be preferably 30/70 to 98/2, more preferably 50/50 to 95/5 improve the sensitivity and the storage stability of the photothermographic material. It is understood in the art that the silver halide grains used in the photothermographic material as photocatalyst. The silver halide does play role in the formation of silver image. The silver iodobromide that is stable before image formation would be inherently stable after image processing. Supposedly, Siga et al fails to recognize the print-pout

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stability presented in the argument. It is not necessarily meant that it would not have been obvious to the worker of ordinary skill in the art to use the silver iodobromide taught in Siga et al in the material of the primary references since the motivation to combine the references does not have to be identical to that of the applicants. "Although the motivation to combined here differs from that of the [appellant], the motivation in prior art to combine the references does not have to be identical to that of the [appellant] to establish obviousness." In re Kemps, 97 F. 3d 1427, 1430, 40 USPQ2d 1309, 1311 (Fed. Cir. 1966) citing In re Dillon, 919 F.2d 688, 693, 16 USPQ2d 1897, 1901 (Fed. Cir. 1990)(en banc), cert. Denied, 500 U.S. 904 (1991). Accordingly, it is believed that the invention as claimed would have been found prima facie obvious to the worker of ordinary skill in the art at the time the invention was made.

Conclusion

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


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12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thorl Chea whose telephone number is (571) 272-1328. The examiner can normally be reached on 9 AM-5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia H. Kelly can be reached on (571)272-1526. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tchea 
October 11, 2005


Thorl Chea
Primary Examiner
Art Unit 1752